PROJECT DESIGN PHASE-I
PROPOSED SOLUTION

Date	4 October 2022
Team ID	PNT2022TMID02451
Project Name	Project - A Novel Method for Handwritten Digit Recognition System

PROPOSED SOLUTION:

S.NO.	PARAMETER	DESCRIPTION
1.	Problem Statement (Problem to be solved)	In light of the fact that handwriting is subjective from person to person, it becomes difficult to manually comprehend a large amount of information. It becomes tedious and time-consuming. Therefore, an efficient model is required for the same purpose. As part of the handwriting digit recognition model, errors are minimized and handwriting is effectively recognized. This can be used in many real time applications as well.
2.	Idea / Solution description	Deep learning is employed in this model using the neural method. It is composed of multiple layers with activations that resemble the neurons in our brains. It is possible to recognize underlying relationships by learning a set of parameters in a set of data. By adapting to changing inputs, they are able to produce the best results without having to redesign output criteria. The MNIST dataset is also used. This recognition process uses the MNIST data set with 70000 handwritten digits. Artificial neural networks are used to train these images and build a deep learning model. A web application is created that allows users to upload images of handwritten numbers. The model analyzes this image and returns the detected result to the user interface.
3.	Novelty / Uniqueness	Handwriting digit recognition has been the subject of research by a number of prominent researchers. A number of underlying problems, however, remain unresolved. The purpose of this paper is to analyze past studies and overcome this using a unique method based on available resources.

4.	Social Impact / Customer Satisfaction	Digitized handwriting recognition facilitates faster and more efficient recognition. By making older documents easier to understand, it increases efficiency in the scientific field. It can also be used for digital libraries, as well as for understanding archaeological documents. By removing these obstacles, they can have a great social impact and encourage young scientists.
5.	Business Model (Revenue Model)	The product can be developed into a customized app for extra exceptional use. This product is aimed to be free of fee to the public, however the income will be generated by way of promoting this product to the authorities at a low cost, or via without delay promoting it to more than a few institutions (research centers/ libraries etc.) Information from a number necessary and historic great sources will make bigger it's price in the international market. Adding greater novelties to the present undertaking and making it extra personalized for a number area makes this very on hand in the grand scheme.
6.	Scalability of the Solution	In the future, if any software update is required, it can be easily implemented. Modifications can be made to the existing product's programming. In the case of software, the website application needs to be updated with the new functionality. The existing functionality of the product will not be affected, and new functionality can be easily integrated. In addition, any glitches in the product will be notified to increase efficiency.